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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/608,620	06/30/2000	Karl Blume	3309P-114	9440

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EXAMINER

ROSALES HANNER, MORELLA I

ART UNIT	PAPER NUMBER
2128	5

DATE MAILED: 05/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/608,620

Applicant(s)

BLUME ET AL.

Examiner

Morella I Rosales-Hanner

Art Unit

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 05 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

Detailed Action

1. **Claims 1 – 27 have** been presented for reconsideration. Claims 1 – 27 have been reconsidered and rejected.

Response to Arguments

2. Applicant's arguments filed on March 03, 2003 have been fully considered.

Examiner's response is as follows:

- 2.1 Regarding the objection to the drawings:

The Examiner maintains the objection and thanks the applicants for agreeing to submit clarifying formal drawings upon receipt of Notice of Allowance.

- 2.2 Regarding Examiner's objection to the Inventors' Oath and Declaration

Applicant's arguments are persuasive; therefore, the Examiner withdraws the objection.

- 2.3 Regarding Examiner's objection to the specification:

The Examiner thanks the Applicants for amending the specification to identify each of the related applications incorporated by reference in the present application.

- 2.4 Regarding Applicant's response to the non-statutory double patenting rejection of claims 1, 17 and 22:

Applicants have stated that:

“to establish an obviousness-type double patenting rejection the Examiner must: 1) identify the inventions claimed in the claims under consideration and in the patent claims; that is, the Examiner must identify a claim of the patent that is compared to each of the rejected claims of the application; and 2) the Examiner must establish that any variation between the inventions claimed in the claims under consideration and the earlier-issued patent claims would have been obvious to a person of ordinary skill in the art. Further, when considering whether the invention defined in a claim of the application is an obvious variation of the invention defined in the claim of a patent, the disclosure of the patent may not be used as prior art.”

Applicants' arguments are persuasive, the inventions claimed in the claims under consideration have been identified along with the reasons why a person of ordinary skills in the art would conclude that the invention defined in the claims in issue is an obvious variation of the invention
(please refer to section 4)

2.5 Regarding Applicant's response to the 102 rejection:

Applicants' arguments are persuasive, therefore the Examiner withdraws the rejection.

2.6 Regarding Applicant's response the 103 rejection:

Applicants' arguments are not persuasive. Applicants have not argue the merits of the 103 rejection, but have merely alleged that the independent claims are allowed and therefore that the dependent claims are also allowable.

Specification

3. The attempt to incorporate subject matter into this application by reference to **U.S. application number 09/212,923** is improper because this application was **abandoned on October of 2001** and therefore has not been published or issued as a patent. Please refer to MPEP § 608.01 (p). Applicant is required to amend the disclosure of the referencing application to include the material incorporated by reference without adding new matter. Appropriate correction is required.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed **terminal disclaimer** in compliance with **37 CFR 1.321(c)** may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim [1] rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim [2] of U.S. Patent No. [3] in view of [4]. [5]

4.1 Claims 1 – 8 and 10 – 27 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over **claims 1- 6, 9 –14, and 18 - 21 of U. S. Patent No. 6,587,741**, issued to Chetta et al. hereafter referred to as *Chetta*, in view of **U. S. Patent No. 4,841,726** issued to Claus Burkhardt, hereafter referred to as *Burkhardt*.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows:

4.1.1 Claim 1 of the instant application is drawn to a method of designing a an engine case static structure of a gas turbine engine, comprising the steps of:

- creating signals representing an engine case static structure knowledge base of information having a plurality of design rule signals with respect to a corresponding plurality of parameter signals of associated elements of an engine case static structure, wherein the engine case static structure knowledge base comprises a data value signal for each one of the plurality of design rule signals;

- entering a desired data value signal for a selected one of the plurality of parameter signals of an associated element of the engine case static structure;
- comparing the entered desired data value signal for the selected one of the plurality of parameter signals with the corresponding data value signal in the engine case static structure knowledge base for the corresponding one of the plurality of design rule signals; and
- creating signals representative of a geometric representation of the selected one of the plurality of parameter signals of the associated element of the engine case static structure if the result of the step of comparing is such that the entered desired data value signal for the selected one of the plurality of parameter signals is determined to have a first predetermined relationship with respect to the corresponding data value signal in the engine case static structure knowledge base for the selected one of the plurality of design rule signals.

Claim 1 of the *Chetta* reference claims [Col 19, lines 2 – 42]:

A method of designing a spline coupling of a turbine engine, comprising the steps of:

- creating signals representing a spline coupling knowledge base of information having a plurality of design rule signals with respect to a corresponding plurality of parameter signals of associated elements of the spline coupling, wherein the spline coupling knowledge base comprises at least one data value signal for each one of the plurality of rule signals;
- entering a desired data value signal for a selected one of the plurality of parameter signals of an associated element of a structure;

- comparing the entered desired data value signal for the selected one of the plurality of parameter signals with the corresponding at least one data value signal in the spline coupling knowledge base for the corresponding one of the plurality of rule signals; and
- creating signals representative of a geometric representation of the selected one of the plurality of parameter signals of the associated element of the spline coupling if the result of the step of comparing is such that the entered desired data value signal for the selected one of the plurality of parameter signals is determined to have a first predetermined relationship with respect to the corresponding at least one data value signal in the spline coupling knowledge base for the selected one of the plurality of rule signals.

Claim 2 of the instant application is drawn to the step of updating signals representing a model of the engine case static structure with the selected one of the plurality of parameter signals of the associated element of the engine case static structure.

Chetta claims [Claim 2] the step of updating signals representing the model of the spline coupling with the selected one of the plurality of parameter signals of the associated element of the spline coupling.

Claim 3 of the instant application is drawn to the step of modifying an entered desired data value signal if the result of the step of comparing is such that the entered desired

data value signal for the selected one of the plurality of parameter signals is determined to have a second predetermined relationship with respect to the corresponding at least one data value signal in the engine case static structure knowledge base for the selected one of the plurality of design rule signals.

Chetta claims [Claim 3] the step of modifying an entered desired data value signal if the result of the step of comparing is such that the entered desired data value signal for the selected one of the plurality of parameter signals is determined to have a second predetermined relationship with respect to the corresponding at least one data value signal in the spline coupling knowledge base for the selected one of the plurality of rule signals.

Claim 4 of the instant application is drawn to:

- comparing a modified data value signal with the corresponding data value signal in the knowledge base for the corresponding one of the plurality of design rule signals; and
- creating signals representative of a second geometric representation if the result of the step of comparing is such that the modified data value signal is determined to be of the first predetermined relationship with respect to the corresponding data value signal in the knowledge base for the corresponding one of the plurality of design rule signals.

Chetta claims [claim 4] the step of :

- comparing the modified data value signal with the corresponding data value signal in the knowledge base for the corresponding one of the plurality of rule signals; and
- creating signals representative of a second geometric representation if the result of the step of comparing is such that the modified data value signal is determined to be of the first predetermined relationship with respect to the corresponding data value signal in the knowledge base for the corresponding one of the plurality of rule signals.

Claim 5 of the instant application is drawn to storing signals representative of the created engine case static structure knowledge base of information.

Chetta claims [**claim 5**] is drawn to storing signals representative of the created spline coupling knowledge base of information.

Claim 6 of the instant application is drawn to displaying signals representative of the created geometric representation of the selected one of the plurality of parameter signals of the associated element of the engine case static structure.

Chetta, claim 6 is drawn to displaying signals representative of the created geometric representation of the selected one of the plurality of parameter signals of the associated element of the spline coupling.

Claims 7 and 8 of the instant application are drawn to generating wall thickness parameter signals that includes manufacturing wall parameter signals, pressure

generated parameter signals, containment generated parameter signals, and wall radius parameter signals as well as strut configuration parameter signals which includes flow blockage parameter signals, strut material properties parameter signals, and strut dimension parameter signals.

Chetta, claim 21 is drawn to generating design parameter signals that include performance parameter signals for generating analysis signals and manufacturing parameter signals for establishing manufacturing constraints and preferences

Claims 10 of the instant application is drawn to analyzing signals representative of a geometric representation of the selected one of the plurality of parameter signals of the associated element of the engine case static structure and

Chetta claims [claim 9] the step of analyzing signals representative of a geometric representation of the selected one of the plurality of parameter signals of the spline coupling.

Claim 11 of the instant application is drawn to performing a weight analysis on the signals representative of the geometric representation of the selected one of the plurality of parameter signals of the associated element of the engine case static structure.

Chetta claims [claim 10] the step of performing a weight analysis on the signals representative of the geometric representation of the selected one of the plurality of parameter signals of the spline coupling.

Claim 12 of the instant application is drawn to creating signals representative of the model of the engine case static structure.

Chetta claims [claim 11] the step of creating signals representative of the model of the spline coupling.

Claim 13 of the instant application is drawn to data value signals comprising a numerical value.

Chetta claims [claim 12] data value signals comprising a numerical value.

Claim 14 of the instant application is drawn to data value signals comprising a range of values.

Chetta claims [claim 13] data value signals comprising a range of values.

Claim 15 of the instant application is drawn to:

- presenting a data value signal; and
- selecting a desired data value signal from the presented data value signal for each one of the plurality of parameter signals of the associated element of the engine case static structure.

Chetta claims [claim 14]:

- presenting a data value signal; and
- selecting a desired data value signal from the presented data value signal for each one of the plurality of parameter signals of the associated element of the spline coupling.

Claim 16 of the instant application is drawn to providing a visual display containing signals representative of a graphic depiction of the data value signal for each one of the plurality of parameter signals of the associated element of the engine case static structure.

Claim 14 of *Chetta* is drawn to providing a visual display containing a graphic depiction of the at least one data value signal for each one of the plurality of parameter signals of the associated element of the spline coupling.

Claim 17 of the instant application is drawn to a method of designing a structure for a gas turbine engine, comprising the steps of:

- providing a structure knowledge base storing a plurality of structure design parameter signals corresponding to a plurality of design rule signals, wherein the structure knowledge base includes a design parameter signal for each of the design rule signals;
- receiving a parameter value signal corresponding to the design parameter signal;
- comparing the parameter value signal with the design parameter signal stored in the structure knowledge base; and

- modifying the value of the design parameter signal if the parameter value signal has a predetermined relationship with the design parameter signal and the design rule signal.

Chetta claims [claims 1 - 4] a method of designing a structure for a turbine engine comprising the steps of:

- creating (providing) a structure knowledge base having (storing) a plurality of rule signals with respect to corresponding structure parameter signals, wherein the knowledge base comprises (includes) at least one data value signal for each one of the plurality of rule signals;
- entering (receiving) desired data value signal for a selected one of the plurality of parameter signals
- comparing the desired data value signal with the corresponding data value stored in the structure knowledge base; and
- updating (modifying) the values of the design parameter signal if the parameter value signal has a predetermined relationship with the design parameter signal and the design signal.

Claim 18 of the instant application is drawn to creating a geometric representation of a structure by utilizing the design parameter value signals; and displaying the geometric representation the structure.

Chetta claims [claim 4] creating a geometric representation of a structure by utilizing design parameters signals; and [claim 6] displaying the geometric representation of the structure.

Claim 19 of the instant application is drawn to receiving a parameter value signal by employing a mouse to provide the value of the parameter signal.

Chetta claims [claim 18, line 8] input means for receiving a parameter value.

Claim 20 of the instant application is drawn to employing a mouse to alter a geometric representation of a structure.

Chetta claims [claim 18, line 13] adjustment means for modifying a model of a structure.

Claim 21 of the instant application is drawn to a computerized system for designing a structure of a gas turbine engine, comprising:

- a structure knowledge base;
- selection means for receiving parameter value signals corresponding to the design parameter signals;
- processing means for comparing the parameter value signal with the design parameter signals stored in the structure knowledge base; and

- means for creating a geometric representation of the structure if the parameter value signal has a first predetermined relationship with the design parameter signal and the design rule signals.

Chetta claims [Claim 18] a computerized system for designing a structure of a gas turbine engine, comprising:

- a knowledge base;
- input means for receiving design parameter value signals corresponding to design parameter signals;
- evaluation (processing) means for comparing the design parameter value signal with the plurality of design rule signals;
- creation means for generating (creating) a geometric representation of the structure.

Claim 22 of the instant application is drawn to a computerized system for designing a structure for a gas turbine engine, comprising:

- a structure knowledge base including a plurality of design rule signals for generating signals representing a structure model, wherein each of the design rule signals has a first relationship with a design parameter signal;
- input means for receiving a design parameter value signal corresponding to the design parameter signal;
- evaluation means for comparing the design parameter value signal with the plurality of design rule signals;

- adjustment means for modifying the structure model signals utilizing the design parameter value signal and the plurality of design rule signals; and
- creation means for generating signals representative of a geometric representation of the structure model signals.

Chetta claims [claim 18] a computerized system for designing a structure for a turbine engine, comprising:

- a knowledge base including a plurality of design rule signals for generating signals representing a structure model, wherein each of the design rule signals has a first relationship with design parameter signals;
- input means for receiving a design parameter value signal corresponding to one of the design parameter signals;
- evaluation means for comparing the design parameter value signal with the plurality of design rule signals;
- adjustment means for modifying the structure model signals utilizing the design parameter value signal and the plurality of design rule signals; and
- creation means for generating signals representative of a geometric representation of the structure model signals;

Claim 23 of the instant application is drawn to design parameter signals and performance parameter signals received from the input means.

Chetta claims [claim 18, line 8]: input means for receiving a design parameter value signal corresponding to one of the plurality of design parameter signals.

Claim 24 of the instant application is drawn to a computerized system with means, utilizing the design rule signals, for creating a structure model configuration signals utilizing design parameter signals, performance parameter signals, and a plurality of design rule signals.

Chetta claims [claims 19 - 21]: a computerized system with means, utilizing design rule signals, for creating a structure model configuration signals utilizing design parameter signals, and a plurality of design rules.

4.1.23 Claim 25 of the instant application is drawn to a computerized system with cautionary means for generating a warning signal if the parameter value signal does not satisfy the plurality of the design rule signals; and means for displaying the warning signal.

Chetta claims [claim 19] a computerized system with cautionary means for generating a warning signal if the design parameter value signal does not satisfy the plurality of the design rule signals; and means for displaying the warning signal.

Claim 26 of the instant application is drawn to a computerized system with:

- input means for receiving material parameter signals;

- means for generating weight signals for the structure model utilizing material parameter signals and structure model signals.

Chetta claims [claim 21] a computerized system with:

- input means for receiving material parameter signals;
- means for generating weight signals for the structure model utilizing material parameter signals and structure model signals.

Claim 27 of the instant application is drawn to design parameter signals that include performance parameter signals for generating analysis signals of the structure model, and manufacturing parameter signals for establishing manufacturing constraints and preferences for the structure model.

Chetta claims [claim 21] design parameter signals that include performance parameter signals for generating analysis of the structure model and manufacturing parameter signals for establishing manufacturing constraints and preferences for the structure model.

Chetta fails to expressly teach that the intended use of the disclosed invention is for designing an engine case static structure of a gas turbine engine. However, *Chetta* teaches [Col 6, line 66] that while a design method and system for spline coupling is shown for use in the field of aeronautical design, the invention is not limited, as this design method may be employed in other design areas, such as the field of automotive design, without departing from the broader aspects of the invention. Furthermore,

Chetta incorporates by reference a method and system for designing frames and cases [col 1, lines 16 – 19].

After comparing **claims 1- 6, 9 –14, and 18 – 21** of the *Chetta* reference to **claims 1 – 8 and 10 – 27** of the instant application the only addition to the claim in the instant application is the part of the gas turbine engine.

Burkhardt teaches [**Abstract**] a gas turbine jet propulsion unit of multi-shaft-double-flow construction in which a front compressor or fan supplies compressed air into a secondary channel arranged coaxially to the propulsion unit axis and formed between outer and inner wall structures, from which a secondary air component is taken and blown out against the turbine housing structures (frame) for purposes of turbine component cooling. *Burkhardt* further teaches [Col 2, lines 27 - 40] that it is far-reachingly a feature of every active radial gap control (Active Clearance Control) that at least two cooling air quantities are available (insofar as one operates with air), namely, a small quantity, respectively, the quantity zero and a quantity which is designed for the system. Depending on the type of construction, however, for the most part for a short period of time during the acceleration, respectively, re-acceleration of a propulsion unit, the impact cooling must not be effective in order to avoid an undesired running-in of the rotor blades into the housing (frame) linings.

It would have been obvious to one of ordinary skills in the art, at the time of the invention, to modify the method of designing a spline coupling for a gas turbine engine as taught by *Chetta* to design a design frame and cases for gas turbine engines

in order to improve the cooling of turbine components thus minimizing the undesired running-in of the rotor blades into the housing (frame) linings of the gas turbine engine.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Morella Rosales-Hanner whose telephone number is (703) 305-8883. The examiner can normally be reached Monday-Friday from 7:00 a.m. to 3:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached on 703 305-9704. The fax number for the organization where this application or proceeding is assigned is (703) 872-9306.

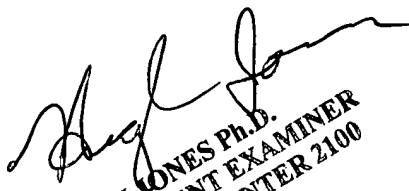
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

MRH

May 17, 2004

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